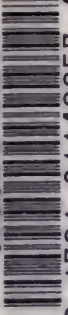


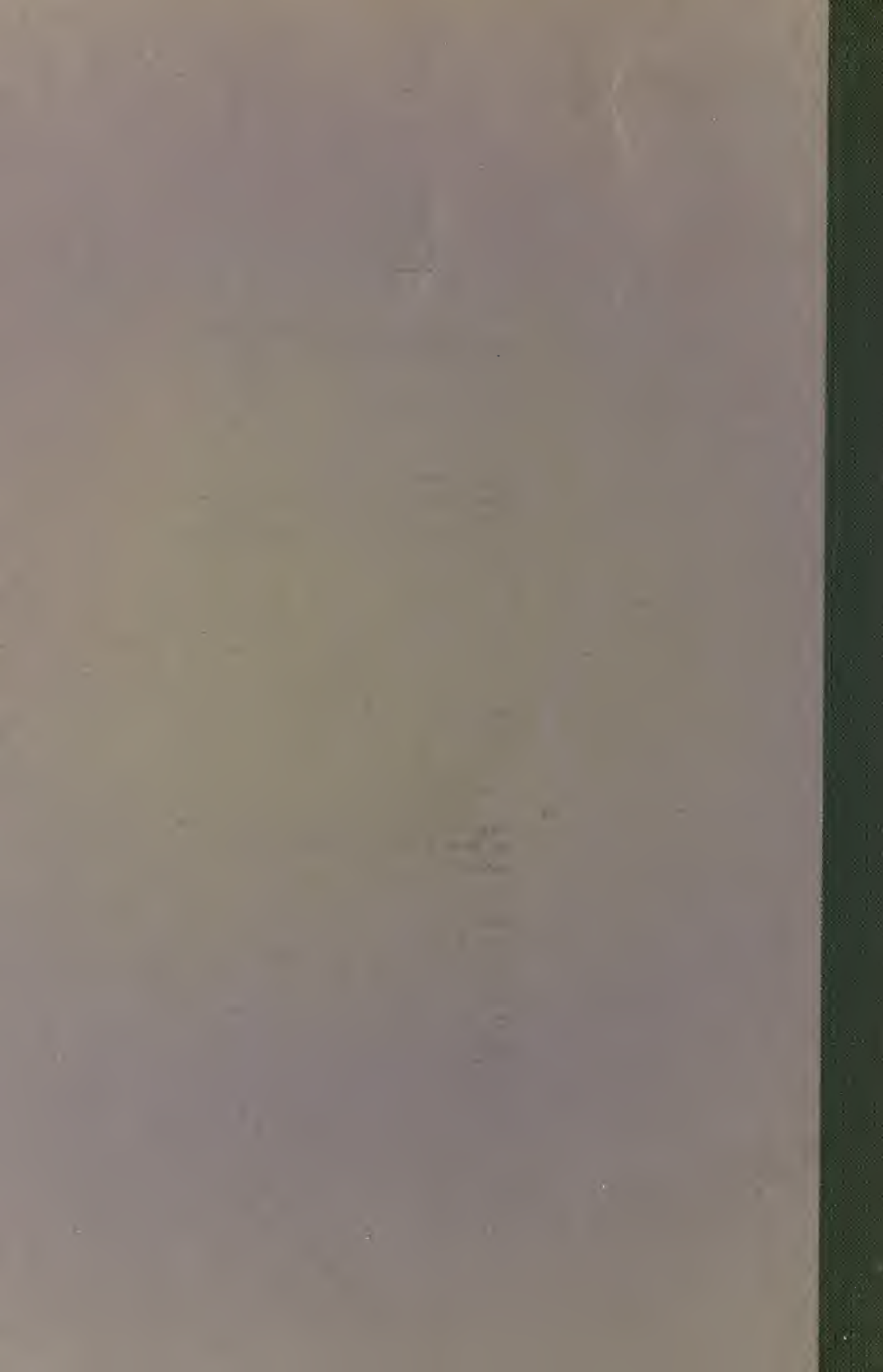
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Collingwood, Robin George  
Are history and science  
different kinds of knowledge?

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### III.—ARE HISTORY AND SCIENCE DIFFERENT KINDS OF KNOWLEDGE?<sup>1</sup>

(A SYMPOSIUM BY R. G. COLLINGWOOD, A. E. TAYLOR,  
AND F. C. S. SCHILLER.

I. BY R. G. COLLINGWOOD.

FROM the point of view of the theory of knowledge or logic, must a distinction be drawn between two kinds of knowledge called respectively History and Science?

Such a distinction is usually made: we shall argue that it is illusory. It is implicit<sup>2</sup> in the whole drift of the Platonic philosophy, though Plato nowhere, I think, states it clearly. But Aristotle not only states it, but states it in a way which, though only incidental, implies that it is familiar. In a well-known passage of the *Poetics* he remarks that poetry is more scientific<sup>3</sup> than history, because poetry deals with the universal, for instance, what a generalised type of man would do on a generalised type of occasion (and this, he implies, as *knowledge of the universal*, is science), whereas history deals with particular facts such as what, on a particular occasion, a particular person said. History is thus the *knowledge of the particular*.

I. The distinction between history as knowledge of the particular and science as knowledge of the universal has become common property and is in general accepted without question. We propose to criticise it: and as a preliminary, we shall indicate two difficulties which we shall not follow up.

<sup>1</sup> Contributed to the Joint Session of the Mind Association and the Aristotelian Society at Manchester, July 14th-16th, 1922.

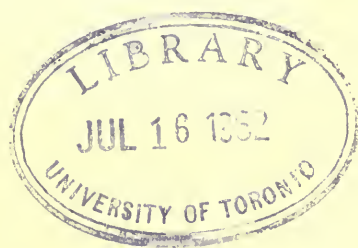
<sup>2</sup> I would suggest, for instance, that just so far as Mr. H. J. Paton (*Proc. Arist. Soc.*, 1922, pp. 69 *seqq.*) is right in identifying *εἰκασία* in Plato with art, so far *πίστις* is to be identified with history, as cognition of the actual, but only *γινόμενον*, individual.

<sup>3</sup> *φιλοσοφώτερον*. I need hardly remind the reader that what we call science Aristotle regularly calls *φιλοσοφία*, a usage long followed in this country and criticised rather spitefully by Hegel. What we nowadays (having given in to Hegel) call philosophy Aristotle calls *σοφία*, *θεολογία*, or *πρώτη φιλοσοφία*.

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*mere theoretical*

(a) It implies a metaphysical distinction between two kinds of entity, a *particular* and a *universal*, such that any cognition may be knowledge of the one in isolation from the other. This dualism is precisely the doctrine which Plato attacked in the *Parmenides* when he pointed out that the universal, thus distinguished from the particular as a separate object, loses just its universality and becomes merely another particular. The mediæval nominalists attacked it again, in the form in which the realists held it: and Berkeley once more attacked it in the doctrine of abstract ideas. Any one of these three arguments could be directed with disastrous effect on the metaphysical groundwork of the distinction between history and science: but we shall not undertake this task because the arguments in question are purely destructive, and like all destructive arguments would be waved aside as mere examples of the 'difficulties' which seem only to stimulate the faith of the believer.

*understanding*

(b) We might drop metaphysics and appeal to experience, which clearly enough shows the instability of such a dualism. Wherever people have distinguished science and history as different kinds of knowledge they have tended to degrade one into the position of a pseudo-knowledge and to erect the other into the only real knowledge.

(i) In Greek thought science or knowledge of the universal is real knowledge and history or knowledge of the particular is only half-knowledge. For Plato the particular is midway between being and not-being, and therefore our best possible cognitions of it are midway between knowledge and ignorance. They are not knowledge: they are mere opinion. For Aristotle the qualification of poetry as more scientific than history implies that poetry (and therefore *a fortiori* science) comes nearer to satisfying the ideal of knowledge than history does. This position became traditional, and crops out in a curious way in the nineteenth century. It was common in that period to propose that history should be elevated to the rank of a science: which meant that it had hitherto not been a science because it only recognised the particular, but that now this reproach was to be removed, and after a long apprenticeship spent in the proper Baconian way in collecting facts history was to be promoted to the task of framing general laws, and thereby converted into a science fit to take its place among the other sciences like chemistry and mechanics. This proposal, to redeem history from its degraded infra-scientific position, became part of the regular programme of nineteenth-century empiricism and positivism, and the science into which it was to be converted

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was variously entitled Anthropology, Economics, Political or Social Science, the Philosophy of History, and Sociology.

(ii) The opposite tendency has been late in appearing, but it has made amends for its lateness. The chief feature of European philosophy in the last generation has been that movement of reaction from nineteenth-century positivism which has tended to degrade science into a false form of knowledge and to find the true form in history. The metaphysical notion of reality as process, movement, change, or becoming has had its reverse (perhaps really its obverse) side in an epistemology which places history at the centre of knowledge. In this, implicitly if not explicitly, the schools of Mach, of Bergson, of James, and of Croce agree: and even more plainly they agree in holding that science is not knowledge at all but action, not true but useful, an object of discussion not to epistemology but to ethics. Any cognition (such seems to be the Berkeleian principle common to these schools) must be of the particular, and must therefore be history: what is called a cognition of the universal cannot be a cognition at all but must be an action. They do not all intend by this analysis to 'degrade' science in the sense of denying its *value*: for it is, they maintain, *useful*: what they deny is simply its truth.

Experience shows the difficulty of keeping the balance even and the temptation to identify the genus knowledge with one of its species, thereby reducing the other to the position of an expedient towards knowledge or an inferior kind of knowledge. But no one who really wishes to maintain the dualism will let this deter him. Grant that every one from Plato to Croce has failed to maintain it, *he* will not fail but will stand by the very simple doctrine that knowledge is a genus with two species: knowledge of the particular, history, and knowledge of the universal, science. This simple faith in the possibility of maintaining a dualism by sheer will-power, undeterred by the spectacle of the bleaching bones of previous adventurers, is left untouched by the expressions of a disillusioned scepticism. We shall not pursue this line of criticism, but shall try simply to describe how the scientist and the historian work, in order to see whether we can detect a fundamental difference between them.

II. It is commonly assumed that what the scientist does, in virtue of which he is a scientist, is to generalise. Everything else which he may do, it is thought, is (in so far as he is a scientist) a means to this end. When it is achieved his work is done and there is nothing more for him to do except to go on and frame a new generalisation. That is the

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meaning of the common saying that science is the knowledge of the universal. Is it true?

As a common opinion it may be countered with another. Generalisations can be learnt by hearsay or reading: for instance, you may learn by heart the list of fossils characteristic of a certain horizon by simply getting them up from a book. Now common opinion holds that a man may be book-learned in a science and yet incompetent in it. A geologist may know the names of fossils, but if we find on putting him down in front of an actual landscape or in an actual quarry that he cannot give us a geological account of this particular object, we say that he is an impostor. He can repeat, it may be, all the generalisations which (we generally think) constitute the *corpus* of geological science, but if he cannot apply them he is no geologist. *but not scientist*

Friends and enemies of the natural sciences agree in thinking the *application* of generalisations to be characteristic of them, and so it is, but not in quite the way that is generally thought. 'Science' is praised or despised for its practical or economic value, and the geologist is respected or scorned for being able to tell us where to look for coal. It is implied that geology means not merely knowing generalities but interpreting particular facts in the light of these generalities: being able to say 'my geological learning leads me to believe that there is coal just below this sandstone'. And it is implied that the person who says this is more entitled to the name of geologist than one who just reels off general statements.

The common view of science as essentially useful or utilitarian is not wholly erroneous; it conceals an important truth, namely that a scientist is only a scientist *ἐνεργείᾳ* when he is interpreting concrete facts in the light of his general concepts, and that the framing of these concepts, if regarded as something distinct from the application of them, is not the end of science but the means. The geologist *ἐνεργείᾳ* is the man who is occupied not in repeating, nor even in inferring, generalised truths, but in looking at country with a geologist's eye, understanding it geologically as he looks at it, or 'applying' his geological concepts to the interpretation of what he sees. To possess these concepts without so applying them is not (as the view which identifies science with generalisation would imply) to be an actual geologist, but only at most to be a potential geologist, to possess the tools of a geologist without using them. But we are here in danger of a serious mistake. The potential geologist is only a mythological abstraction: he cannot really exist: for where

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the 'tool' is a concept and the 'use' of it is the interpretation of individual fact by its means, the tool cannot be possessed in idleness. That would be to strain the metaphor. Interpretation is not the employment of a previously-constructed tool (concept) upon a separately-given material (fact): neither the concept nor the fact is 'possessed' (thought and observed respectively) except in the presence of the other. To possess or think a concept is to interpret a fact in terms of it: to possess or observe a fact is to interpret it in terms of a concept.

Science is this interpretation. To live the life of a scientist consists in the understanding of the world around one in terms of one's science. To be a geologist is to look at landscape geologically: to be a physiologist is to look at organisms physiologically, and so on. The object which the scientist cognises is not 'a universal,' but always particular fact, a fact which but for the existence of his generalising activity would be blank meaningless sense-data. His activity as a scientist may be described alternatively as the understanding of sense-data by concepts, or the realising of concepts in sensation, 'intuiting' his thoughts or 'thinking out' his intuitions. In this process he recognises the objects before him as being of this or that kind: and sometimes this recognition results in the discovery that they are economically valuable, that is, it serves as a basis for action. That is the truth which underlies the idea of science as essentially utilitarian: but if we are to use technicalities we shall say that utility is not its *essence* but its *accident*, or at most its *property*, since ability to use one's world perhaps follows necessarily from understanding it. And every science has the same character: not only geology and physiology but even what we are accustomed to consider the most abstract sciences. Thus, to be a chemist consists not in knowing general formulæ but in interpreting particular changes which we observe taking place by means of these formulæ: the science of mechanics consists in the similar interpretation of observed motions: even mathematics does not consist of abstract equations and formulæ but in the application of these to the interpretation of our own mathematical operations.

A distinction is often made between the particular and the individual, the former as a mere abstraction, the latter as the concrete fact, synthesis of two opposite abstractions, the particular and the universal. If we must conform to this usage we shall put our contention by saying that there is no such thing as knowledge either of the particular or of the universal, but only of the individual: and that the

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sense-datum (pure particular) and concept (pure universal) are false abstractions when taken separately which yet, as elements in the one concrete object of knowledge, the individual interpreted fact, are capable of being analytically distinguished. This may be illustrated by the fallacy of inductive logic. The inductive logician assumes that the task of science is to generalise, to frame universal laws; and that its starting-point is the facts of ordinary observation. The problem of inductive logic then is how, from the particular facts, do we reach the universal law? It tries to describe this process in detail: but when it has done so one cannot help seeing that the alleged particular from which it started was never a pure particular but was already steeped in generality. The process ought to have begun with the pure uninterpreted sense-datum. It never does so begin in the descriptions of inductive logicians, for two excellent reasons: such a pure sense-datum does not exist except as an abstraction and therefore cannot be the concrete starting-point of a process, and if it did exist one could never get beyond it to reach the universal. So the inductive logician makes the process begin with the carefully staged experiment or intelligently recorded observation, which is not a particular at all but an individual, a concrete fact bristling with conceptual interpretations; and from this point, which already contains and presupposes the concept, he proceeds to 'induce' the concept he has surreptitiously presupposed. How, after this, he has the face to accuse syllogistic logic of *petitio principii* remains a mystery.

The scientist's aim is, then, not to 'know the universal' but to know the individual, to interpret intuitions by concepts or to realise concepts in intuitions. The reason why it has so often been fancied that his aim is to form generalisations is probably that we expect science to be contained in textbooks, much as we expect art to be contained in pictures. Art is to be found not in pictures but in our activity which has pictures for its object: and science is to be found in our activity which uses scientific textbooks, not in the textbooks themselves. The teacher who puts a textbook into the hands of a student must be understood as saying: 'I give you not science, but the key to science: the information here printed is not science, it is something which when you find out how to use it will help you to build up in your own mind an activity which alone is itself science'. It is only because this is so obvious and so continually goes without saying that we habitually overlook it.

III: The scientist generalises, certainly: but generalisation

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is subordinate to his real work as a scientist, the interpretation of individual fact. But the historian does not remain at a level of thought below generalisation: he generalises too and with exactly the same kind of purpose. Such generalisations as charters, mediæval scripts, types of handwriting characteristic of the early fourteenth century, guild institutions, and so forth, go to the interpretation of a scrap of parchment which fits into its place as a link in the history of a town precisely as fossils, Jurassic fauna, shells peculiar to the Portland beds, and so on, are the concepts through which a geologist works out the geological history of a valley. Of late, the historian's concepts have tended increasingly to group themselves into what seem to be independent sciences, palæography, numismatics, archæology and so forth. If, as is mostly the case, they do their work better for being thus incorporated into chartered societies, well and good. But their work is the interpretation of individual fact, the reconstruction of historical narrative: and there is a certain danger that the archæologist, under the influence of the false theory of science which we have criticised, may forget this. He may even think that poor old history has been quite superseded by his own science and others like it, whose aim is not to individualise but to generalise: to reach conclusions not in the form 'we can now assert that Agricola built this fort' but in the form 'we can now assert that Samian bowls of shape 29 went out of use about A.D. 80'. The latter is certainly the form in which the conclusions of many valuable monographs appear: but that is just because the monograph as a whole is only an incident in the scientific lives of its writer and readers, an incident whose importance lies in its bearing on the interpretation of individual facts. Monographs are not archæology: or if they are, then archæology is a false abstraction and we must say monographs are not history, since history is the concrete activity which produces and uses them.

The nineteenth-century positivists were right in thinking that history could and would become more scientific. It did, partly as a result of their work, become at once more critical and trustworthy, and also more interested in general concepts. But its interest in general concepts, reflected in the rise of archæology and such sciences, was the interest of a workman in the improvement of his tools. History did not subordinate the determination of facts to the framing of general laws based on them; that idea was part and parcel of the inductive fallacy. It created within itself new bodies of generalised thought subordinated to its own

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supreme end, the determination or interpretation of individual fact.

IV. The analysis of science in epistemological terms is thus identical with the analysis of history, and the distinction between them as separate kinds of knowledge is an illusion. The reason for this illusion is to be sought in the history of thought. The ancients developed a very much higher type of scientific than of historical thought: such sciences as mathematics, physics, logic, astronomy, etc., in the hands of the Greeks attained a pitch of excellence which history did not rival till the seventeenth century. Their philosophical reflexions were therefore concentrated on scientific thought and not on the less remarkable achievements of history: and from that time till the nineteenth century a lack of balance between the epistemology of science and that of history continued to exist. The result was that in the theory of science attention has always been drawn to the concepts or principles of interpretation according to which the active work of thought proceeds, while the theory of history has contented itself with attending to the finished product of thought, the fully-compiled historical narrative. This is the root of all the alleged differences between history and science. Thus it has been said that science predicts, whereas history only records the past. That is untrue (geology records the past, history predicts that green-glaze pottery will be found in a mediæval ruin) except in the sense that what we arbitrarily call history—the finished narrative when the historian has stopped working on it—is complete and immovable, while what we arbitrarily call science (the mere abstract generalisation) is an early stage in the process of thought which looks forward to its own completion in what inductive logic calls verification.

Again, it is said that the mainspring of science is critical thought, that of history authority. That again is wholly untrue unless we are speaking of *incipient* science and *completed* history: for every kind of work is critical so long as the conclusion is not yet reached, and every kind dogmatic when it is. A working historian is critical in all the same ways as a working scientist, and a scientist who has come to a conclusion states it, everybody knows, as dogmatically as a Pope: it would be a pedantic and insincere affectation if he did not.

These and other fancied distinctions are the result of comparing an inside view of science with an outside view of history—science as an actual process of thought with history as a dead, finished article. When both are regarded as

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actual inquiries, the difference of method and of logic wholly disappears. The traditional distinction, we have suggested, has its origin in a simple historical fact, the fact that science became an object of philosophical reflexion long before history: not in any epistemological dualism. To erect such a dualism is to falsify both science and history by mutilating each of one essential element of knowledge—the element of generalisation or the element of individualisation: and so mutilated, it is not surprising if now history, now science, should appear an illegitimate form of knowledge.

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